SANTA CRUZ BIOTECHNOLOGY, INC.

GFAP (GA-5): sc-58766

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glial fibrillary acidic protein, or GFAP, is an intermediate filament (IF) protein belonging to the type III subclass of IF proteins. Like other IF proteins, GFAP is composed of an amino-terminal head domain, a central rod domain and a carboxy-terminal tail domain. GFAP is specifically found in astroglia, a cell type which is highly responsive to neurologic insults. Astrogliosis is found to be a result of mechanical trauma, AIDS dementia, prion infection and inflammatory demylination diseases, and is accompanied by an increase in GFAP expression. GFAP is an immunohistochemical marker for localizing benign astrocyte and neoplastic cells of glial origin in the central nervous system.

CHROMOSOMAL LOCATION

Genetic locus: GFAP (human) mapping to 17q21.31; Gfap (mouse) mapping to 11 E1.

SOURCE

GFAP (GA-5) is a mouse monoclonal antibody raised against GFAP isolated from spinal cord of porcine origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GFAP (GA-5) is available conjugated to agarose (sc-58766 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-58766 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-58766 PE), fluorescein (sc-58766 FITC), Alexa Fluor® 488 (sc-58766 AF488), Alexa Fluor® 546 (sc-58766 AF546), Alexa Fluor® 594 (sc-58766 AF594) or Alexa Fluor® 647 (sc-58766 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-58766 AF680) or Alexa Fluor® 790 (sc-58766 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GFAP (GA-5) is recommended for detection of GFAP of mouse, rat, human and avian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with other intermediate filaments and may be cross-reactive with astrocytes, ependymal cells and corresponding tumors. GFAP (GA-5) is also recommended for detection of GFAP in additional species, including bovine, porcine, feline and rabbit.

Suitable for use as control antibody for GFAP siRNA (h): sc-29332, GFAP siRNA (m): sc-35466, GFAP siRNA (r): sc-155993, GFAP shRNA Plasmid (h): sc-29332-SH, GFAP shRNA Plasmid (m): sc-35466-SH, GFAP shRNA Plasmid (r): sc-155993-SH, GFAP shRNA (h) Lentiviral Particles: sc-29332-V, GFAP shRNA (m) Lentiviral Particles: sc-35466-V and GFAP shRNA (r) Lentiviral Particles: sc-155993-V.

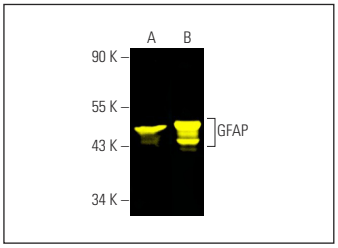
Molecular Weight of GFAP: 50 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, rat cerebellum extract: sc-2398 or U-87 MG cell lysate: sc-2411.

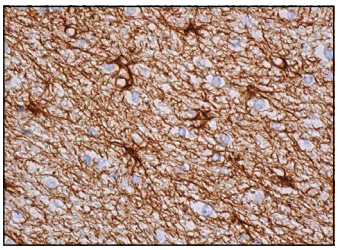
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



GFAP (GA-5) Alexa Fluor® 488: sc-58766 AF488. Direct fluorescent western blot analysis of GFAP expression in C6 whole cell lysate (**A**) and rat cerebellum tissue extract (**B**). Blocked with UltraCruz® Blocking Reagent: sc-516214.



GFAP (GA-5): sc-58766. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of astrocytes and neuropil staining.

SELECT PRODUCT CITATIONS

1. Okabe, Y., et al. 2010. Neural development of methyl-CpG-binding protein 2 null embryonic stem cells: a system for studying Rett syndrome. Brain Res. 1360: 17-27.
2. Fujiwara, K., et al. 2016. Deletion of JMJD2B in neurons leads to defective spine maturation, hyperactive behavior and memory deficits in mouse. Transl. Psychiatry 6: e766.
3. Fang, M., et al. 2017. Metformin treatment after the hypoxia-ischemia attenuates brain injury in newborn rats. Oncotarget 8: 75308-75325.
4. Zhao, H., et al. 2018. Electroacupunture contributes to recovery of neurological deficits in experimental stroke by activating astrocytes. Restor. Neurol. Neurosci. 36: 301-312.
5. Al-Adwani, D.G., et al. 2019. Neurotherapeutic effects of *Ginkgo biloba* extract and its terpene trilactone, ginkgolide B, on sciatic crush injury model: a new evidence. PLoS ONE 14: e0226626.
6. Hwang, J.S., et al. 2020. Transcription factor 4 regulates the regeneration of corneal endothelial cells. Invest. Ophthalmol. Vis. Sci. 61: 21.
7. Rousset, F., et al. 2021. Phoenix auditory neurons as 3R cell model for high throughput screening of neurogenic compounds. Hear. Res. 414: 108391.
8. Yao, Y., et al. 2022. Improvements of autism-like behaviors but limited effects on immune cell metabolism after mitochondrial replacement in BTBR $T^{+}Itpr3^{tf}$/J mice. J. Neuroimmunol. 368: 577893.
9. Bihlmaier, R., et al. 2023. Aquaporin-1 and aquaporin-4 expression in ependyma, choroid plexus and surrounding transition zones in the human brain. Biomolecules 13: 212.

RESEARCH USE

For research use only, not for use in diagnostic procedures.